

**THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:**

1. A submerged gas discharge impeller for supplying a gas to liquid within a container, said impeller comprising:
  - a hollow shaft having at least one bore and a first end connected to a gas supply and a second end extending into said liquid through an opening in the bottom of said container;
  - the second end of said shaft including a gas discharge nozzle in fluid communication with said bore;
  - the shaft including a seal for preventing leakage of said fluid;
  - a drive means for rotating the shaft about its longitudinal axis.
2. The impeller of claim 1 wherein said liquid is a molten metal.
3. The impeller of claim 1 wherein said impeller is biased against said seal.
4. A system for discharging a gas through a liquid, the system comprising:
  - a container for said liquid, said container having a base with an opening;
  - a hollow shaft having a first end connected to a gas supply and a second end extending into said liquid through said opening in said container;
  - a gas discharge nozzle connected to said second end of said shaft;
  - a seal provided adjacent said opening in said container for preventing leakage of said liquid;
  - a motor connected to said shaft for rotating said shaft about its longitudinal axis.
5. The system of claim 4 wherein said liquid is a molten metal.
6. The system of claim 4 wherein said impeller is biased against said seal.
7. A system for producing a metal foam from a molten metal comprising:
  - a bath containing said molten metal, said bath comprising a container with an opening in the base thereof;

- a hollow, rotatable shaft extending generally vertically into said molten metal through said opening, said shaft including a first end extending into said molten metal and a second end connected to a gas supply;
- the first end of said shaft including a gas discharge nozzle submerged in said molten metal;
- a seal located between said shaft and said opening for preventing passage of said molten metal;
- a drive mechanism connected to said shaft for rotating said shaft about its longitudinal axis.

8. The system of claim 4 wherein said impeller is biased against said seal.

9. The system of claim 8 wherein said impeller is associated with a spring for biasing said impeller against said seal.

10. The system of claim 7 wherein portions of said system in contact with said molten metal are formed of a material that repels said molten metal.

11. The system of claim 7 wherein portions of said system in contact with said molten metal are coated with a material that repels said molten metal.